

1 **Claims**

2 What is claimed and desired to be secured by Letters Patent is:

3
4 1. A highway/railroad crossing detection and warning system comprising:

5
6 a) a Doppler radar transmitter and receiver system at a
7 highway/railroad crossing site which detects movement if a
8 train approaches the crossing;

9
10 b) a presence detection system at the crossing site which detects
11 a train at the crossing;

12
13 c) warning signal devices at the crossing activated by said
14 Doppler radar transmitter and receiver system or by said
15 presence detection system for providing warning to a motorist
16 approaching the crossing.

17
18 2. The detection and warning system set forth in Claim 1 including a
19 solar electrical power generation array and storage battery powering
20 said Doppler radar transmitter and receiver system and said presence
21 detector system.

- 1 3. The detection and warning system set forth in Claim 1 wherein the
2 presence detection system operates within a limited area close by the
3 highway/railroad crossing to determine the presence of a train within
4 that area.
- 5
- 6 4. A highway/railroad crossing detection and warning system comprising:
- 7
- 8 a) a Doppler radar transmitter and receiver system positioned at
9 a highway/railroad crossing and able to detect a moving train
10 at an extended distance from said crossing;
- 11
- 12 b) a presence detection system also positioned at said
13 highway/railroad crossing and able to detect a train in a close
14 proximity to said crossing;
- 15
- 16 c) warning signal devices at said crossing activated by said
17 Doppler radar system and by said presence detection system
18 and providing warning to motorists approaching said crossing;
19 and
- 20
- 21 d) solar panel arrays and storage batteries powering said Doppler
22 radar system, said presence detector system and said warning
23 signal devices.

1 5. A highway/railroad crossing detection and warning system comprising:

2
3 a) a Doppler radar transmitter and receiver warning system at a
4 highway/railroad crossing site which detects movement of a
5 train approaching the crossing, the radar warning system
6 comprising two sets of first and second transmitter/receiver
7 units respectively positioned adjacent a railroad track and
8 located an extended distance from the crossing with one set
9 on one side of the crossing, the first transmitter/receiver unit of
10 each set directed away from the crossing and the second
11 transmitter/receiver unit of each set directed toward the
12 crossing;

13
14 b) a presence detection system at the crossing site and
15 comprising present detection units respectively positioned
16 adjacent the railroad track and located a close distance from
17 the crossing;

18
19 c) warning signal devices at the crossing for warning a motorist
20 at the crossing;

21
22 d) wireless communication devices transmitting and receiving
23 signals between the radar warning system and presence

1 detection warning system to the warning signal devices to
2 control their activation; and

3
4 e) solar panel arrays and storage batteries powering all of said
5 systems and warning signal devices.

6
7 6. A highway/railroad crossing detection and warning system comprising:

8
9 a) a Doppler radar transmitter and receiver warning system at a
10 highway/railroad crossing site which detects movement of a
11 train approaching the crossing, the radar warning system
12 comprising two sets of first and second transmitter/receiver
13 units respectively positioned adjacent a railroad track and
14 located an extended distance from the crossing, with one set
15 on one side of the crossing and the other set on another side
16 of the crossing, the first transmitter/receiver unit of each set
17 directed away from the crossing and the second
18 transmitter/receiver unit of each set directed toward the
19 crossing; and

20
21 b) warning devices responsive to signals from said Doppler radar
22 transmitter and receiver warning system.